The false discovery rate in the code to find interesting tests from the input vector
v<-c(1e-5*runif(100), runif(900))
and **Q= 0.05** as proportion of false discoveries among the discoveries

```r
FDR <- function(p, Q) {
 #sort the p vector
 sortedp <- sort(p)
 #number of tests we have
 m <- length(p)
 #Plot sorted Pvalues(smallest to largest) vs line Q*c(1:m)/m
 q <- Q*c(1:m)/m

 #Find P* = P value <line
 p_star <-(sortedp<q)

 #Find the largest p* in p
 pmax<-max(sortedp[p_star])

 #Every P<=P* is "interesting"
 intrestingp <- sortedp<=pmax

 print(paste("We have ",length(sortedp[intrestingp])," interesting Points: "))
 print(sortedp[intrestingp])

 plot(
  c(1:m),
  sortedp,
  main = "RDF",
  ylab = "tests",
  xlab = "number of tests",
  type = "l"
 )
 legend("topleft",
     c("Q*c(1:m)/m", "sorted tests", "Interesting tests"),
     fill = c("red", "green", "blue")
 )
 lines(q, type = "l", col = "red")
 par(new = TRUE)
 points(sortedp, col = "green")
 points(c(1:m)[intrestingp], sortedp[intrestingp], col="blue")
}
```
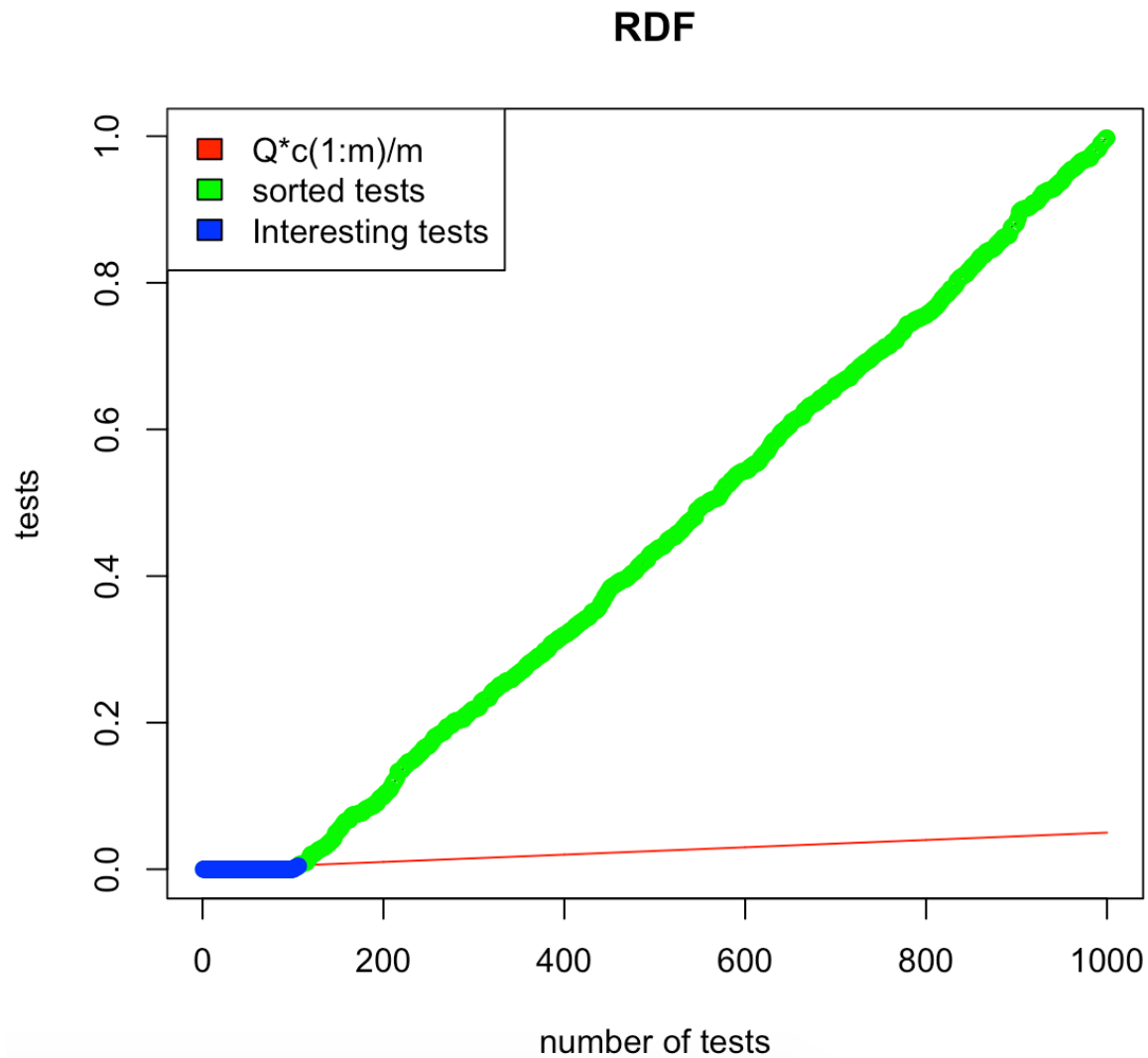
RDF

with 106 interesting points:

[1] "We have 106 interesting Points: "

  [1] 1.389633e-07 1.503935e-07 1.731903e-07 3.829045e-07 6.037997e-07
6.499270e-07 7.258336e-07

  [8] 8.539790e-07 9.079721e-07 9.433414e-07 9.858420e-07 1.188659e-06
1.300721e-06 1.321901e-06

 [15] 1.373092e-06 1.387151e-06 1.840353e-06 1.911960e-06 2.086698e-06
2.155902e-06 2.177454e-06

 [22] 2.316661e-06 2.461257e-06 2.483573e-06 2.484216e-06 2.655458e-06
2.760979e-06 2.972976e-06

 [29] 3.074473e-06 3.125838e-06 3.178235e-06 3.210514e-06 3.247031e-06
3.291068e-06 3.460817e-06

 [36] 3.472044e-06 3.502924e-06 3.527050e-06 3.664259e-06 3.691808e-06
3.696189e-06 3.758969e-06

 [43] 3.781493e-06 3.866980e-06 3.936783e-06 4.029798e-06 4.103479e-06
4.232259e-06 4.524093e-06

 [50] 4.563522e-06 4.673511e-06 4.786391e-06 4.803291e-06 4.946550e-06
5.072058e-06 5.217807e-06

[57] 5.266822e-06 5.408117e-06 5.442879e-06 5.594242e-06 5.658916e-06 5.892959e-06 5.971327e-06
[64] 6.044955e-06 6.246012e-06 6.271142e-06 6.446182e-06 6.458192e-06 6.525042e-06 6.557726e-06
[71] 6.669475e-06 6.708563e-06 6.894592e-06 6.918019e-06 7.019062e-06 7.199260e-06 7.229929e-06
[78] 7.320870e-06 7.703539e-06 7.721309e-06 7.769772e-06 8.070248e-06 8.085083e-06 8.159092e-06
[85] 8.425203e-06 8.511858e-06 8.612878e-06 8.687042e-06 8.704398e-06 8.852779e-06 8.910982e-06
[92] 9.028954e-06 9.235890e-06 9.335003e-06 9.366075e-06 9.398466e-06 9.458536e-06 9.467544e-06
[99] 9.527063e-06 9.622131e-06 7.290028e-04 2.013903e-03 2.451663e-03 2.805215e-03 3.782883e-03
[106] 4.373282e-03